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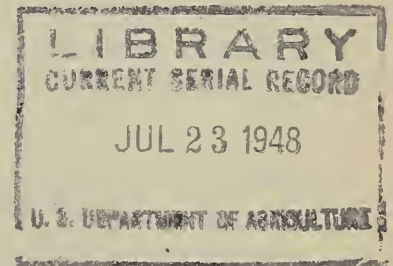
PRODUCTION AND MARKETING ADMINISTRATION

Marketing Facilities Branch

COLD STORAGE PROSPECTS FOR APPLES AND PEARS IN 1946

by

A. S. Walker
Agricultural Economist



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APPLE AND PEAR STORAGE SITUATION FOR THE UNITED STATES

Storage conditions more favorable than in 1944

Storage requirements at the peak of the 1946 season for the apple and pear crops are estimated to be about 35 million bushels for the United States as a whole. Factors other than production affect the storage of apples and pears in any given year, therefore in preparing the storage outlook for 1946 several of these factors were considered. Since the beginning of World War II, approximately 24 percent of the commercial production of apples and pears in apple-storing States have been stored in cold storage warehouses at the peak of the storage season. The ratio of apples stored to apples produced has been somewhat higher in recent years owing to shortages in shipping facilities--trucks and railroad cars--limitations on processors, lack of exports, and anti-inflationary measures. These factors are still causing larger than usual stocks to move into storage. The estimates for apple and pear production and those for storage needs of 1946 are based on crop conditions, and storage occupancy of August 1. Crop losses resulting from drought, storms, and codling moths and other insects, may develop after the first of August, or favorable weather conditions may increase the size of the crop, in which event, the storage needs for the 1946 crop will vary accordingly.

A lower production of apples and pears and a lower occupancy of refrigerated warehouse coolers tend to make more storage space available for these fruits in 1946 than was available in 1944--the last heavy storage year for them. Estimates as of August 1, based on crop conditions of that date, made by the Crop Reporting Board of the Department indicate that the United States commercial production of apples and pears for 1946 will total about 144,830,000 bushels. Of this quantity 142,368,000 bushels will be produced in the 38 apple-storing States with which this study is concerned. Inasmuch as public cooler space was being utilized to a much lesser extent on August 1, 1946 than on August 1, 1944 and since the estimated apple-pear production is below that of 1944, very little trouble is anticipated in taking care of the production that normally moves into storage. Problems will arise in limited areas only and those areas will be few in number.

Production of apples and pears it is estimated will fall short of average by about 3.4 percent. It will probably be about 7.5 percent below the heavy 1944 crop but will exceed last year's short crop by some 43 million bushels or about 43 percent. The bumper

Table 1.--Summary of the apple and pear storage situation for 1946

(In thousands of bushels)

State	: 1946 : : expect- : ed crop :	: 1946 : : expect- : ed peak : storage :	: Net capac- : ity of ap- : ple houses :	: Excess or : deficiency : of apple : house space/1:	: Estimated : quantity that : public c.s. : can store 2/	: Estimated ex- : cess or defi- : ciency of total : cooler space
Maine, N. H.....	972	126	128	2	39	41
Vermont.....	305	95	200	105	20	125
Massachusetts.....	1,569	769	1,145	376	282	658
R. I., Conn.....	1,364	587	891	304	182	486
New York.....	13,568	4,342	6,260	1,918	2,285	4,203
New Jersey.....	2,143	836	583	- 253	709	456
Pennsylvania.....	8,442	1,688	1,427	- 261	1,276	1,015
Del., Md., D.C.....	2,167	152	233	81	105	186
Virginia.....	13,518	4,055	5,574	1,519	899	2,418
West Virginia.....	3,986	757	1,182	425	6	431
North Carolina.....	2,132	43	26	- 17	24	7
Ohio.....	2,507	351	348	- 3	527	524
Indiana.....	1,232	172	229	57	143	200
Illinois.....	3,631	908	776	- 132	684	552
Michigan.....	7,943	874	664	- 210	618	408
Wisconsin.....	780	164		- 164	221	57
Minn., Iowa.....	225	79		- 79	162	83
Missouri.....	1,326	464	486	22	312	334
Nebr., Kans.....	703	120	53	- 67	103	36
Ky., Tenn.....	1,120	123	134	11	230	241
Ark., Okla., Tex.....	945	104	80	- 24	145	121
Mont., Colo., Utah.....	1,991	40		- 40	93	53
Idaho, N. Mex.....	2,527	25	245	220	13	233
Washington.....	40,085	14,298	17,224	2,926	227	3,153
Oregon.....	8,735	2,621	2,033	- 588	480	- 108
California.....	18,452	1,845	1,213	- 632	942	310
5/U. S. Total.....	142,368	3/35,638	41,134	5,496	10,727	4/ 16,223

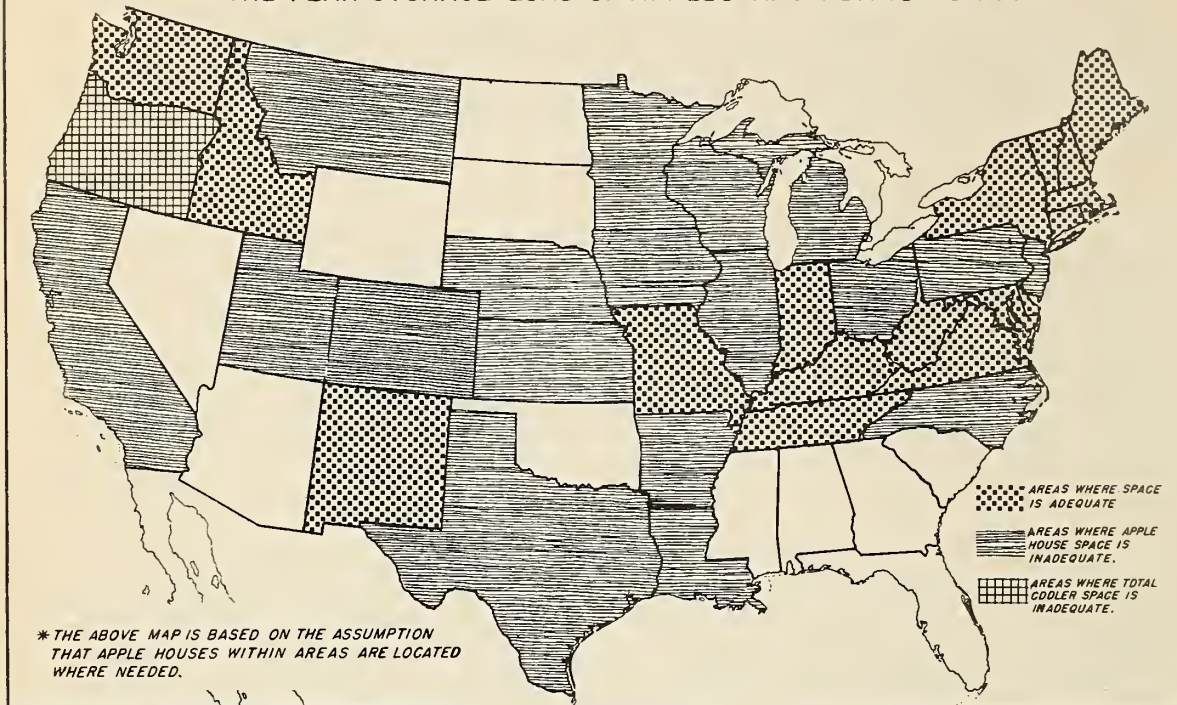
- 1/ The figures in this column are based on the assumption that apple houses be used to store apples and pears only.
- 2/ These estimates are based on the quantities of apples and pears stored in public coolers in 1944, at which time both cooler and freezer space were filled to the working capacity. The quantities of apples and pears in storage at the 1944 peak, adjusted to care for the difference between the August 1 occupancies of 1944 and 1946, respectively, have been used for the estimates.
- 3/ The peak storage loads for the various States are reached at different times, from 1 to 3 months apart. The total peak load shown is a composite of the state peak loads and not the total United States peak for any given month.
- 4/ These estimates are based on two assumptions: (1) that available space is located where it is needed; and (2) that other commodities can be mixed with apples.
- 5/ Total for apple and pear storing states only.

crop of 1944 will probably be surpassed in a few States. Illinois, Missouri, Nebraska, Kansas, Kentucky, Tennessee, Arkansas, Washington, Oregon, and California have very favorable production prospects. The crop in two of the heavy producing States--Virginia and West Virginia--is expected to be only slightly below the bumper crop of 1944.

Apple storage houses, according to a refrigerated space survey made October 1, 1945, had a capacity of 41,134,000 bushels, if full utilization of all space were made. Apple houses in most areas were empty on August 1, 1946, whereas on August 1, 1944 rather large quantities of commodities other than apples were being stored in them. The present storage situation indicates that there will be more storage space for apples and pears during the coming season than was available in 1944.

As a rule, approximately one-fourth of the apples and pears stored at the peak of the season are in general cold storage warehouses, that is, they are stored in warehouses other than refrigerated apple houses. Occupancy of these public general cold storages on August 1, 1944 was 84 percent. By October 1, of that year, owing to heavy out-movement of other commodities, about 10,200,000 bushels had been stored in public general cold storage warehouses. Occupancy on August 1, 1946 was 76 percent. Consequently, it can be expected that public warehouses will be able to care for at least as many apples and pears on November 1 this year as they did in 1944. This means that a minimum of about 51 million bushels of apples and pears--about 15 million bushels more than has ever been stored--could find storage space in the United States at the 1946 peak provided that (1) the space is located within producing area or near market centers (2) available space is not partially filled with commodities which cannot be stored with apples.

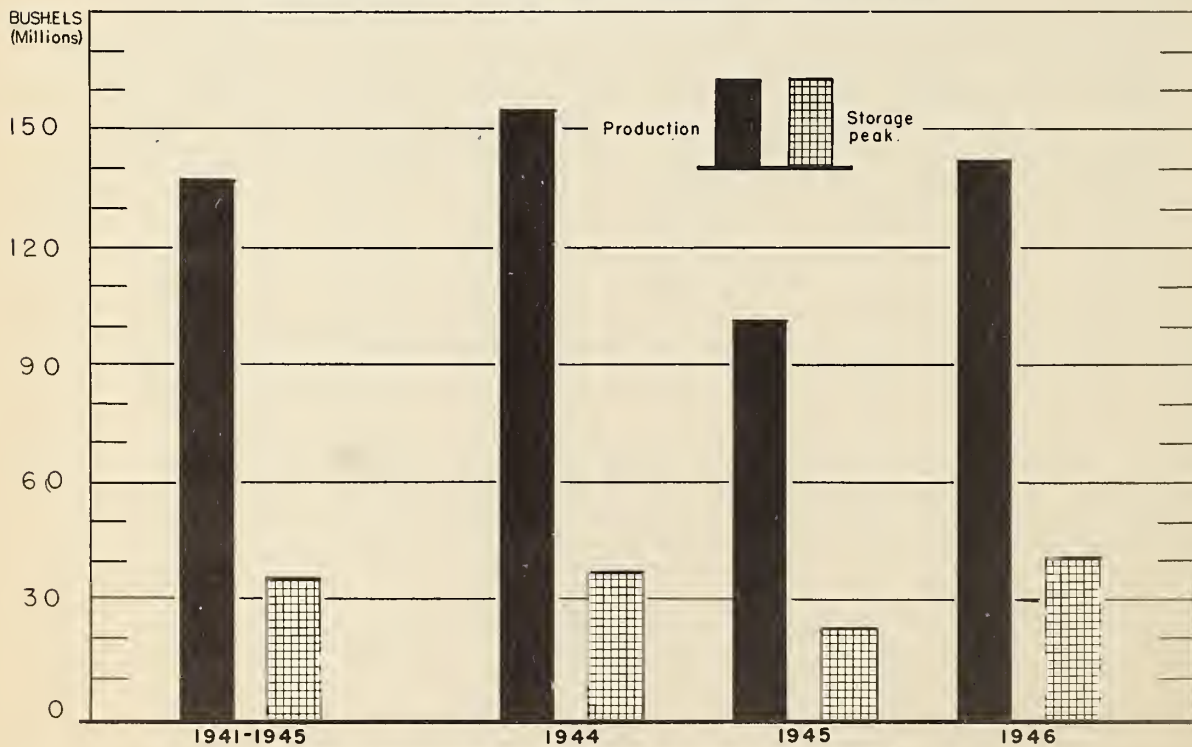
ADEQUACY OF ALL APPLE HOUSE COLD STORAGE SPACE TO STORE
THE PEAK STORAGE LOAD OF APPLES AND PEARS 1946.*



PRODUCTION AND MARKETING ADMINISTRATION.

M.F.B.

COMMERCIAL PRODUCTION OF APPLES AND PEARS AND PEAK COLD STORAGE HOLDINGS,
UNITED STATES, 1941-1945 AVERAGE, AND 1944-1946



PRODUCTION AND MARKETING ADMINISTRATION.

M.F.B.

Storage prospects for 1946, by areas

Only one apple-producing State, Oregon, may be unable to store the percentage of the apple and pear crops that was stored in previous heavy crop years. Cooler space is adequate in other States and regions. Apple warehouse space alone is sufficient to hold the entire storage part of the apple and pear crops in all areas except the North Central and Pacific States, New Jersey, and Pennsylvania.

Pacific States

Two West Coast States--Oregon and California--have insufficient apple house space to store that part of the apple and pear crops normally stored. Only in Oregon do the crops which are larger than in 1944, present a problem. The expected storage peak load is more than $2\frac{1}{2}$ million bushels, which exceeds the 1944 peak by about 600,000 bushels. Oregon has apple house space for only 2 million bushels, which leaves about 600,000 bushels to be stored in public houses. On December 1, 1944, Oregon public cold storages with an occupancy of 96 percent, were storing only 480,000 bushels of apples and pears. August 1 occupancy in 1946 was approximately the same as on August 1, 1944. This indicates that a little more than 100,000 bushels of apples and pears produced in Oregon this year and destined for storage cannot be stored within the State. In 1944 Oregon was being used as an outport for shipping commodities to supply the Pacific forces, and storages in the State at that time were being used extensively for that purpose. This year the August to November movement of commodities other than apples into Oregon storages probably will be appreciably below that of 1944. A considerable quantity of convertible freezer space that could be, and as of August 1 was being used as cooler space, is available in Oregon this year. However, in view of the acute shortage of freezer space which now appears likely it is urged that no space suitable for the storage of freezer commodities be used for apples. Some Oregon apples and pears may have to move into other States for storage. (See recommendations, page 11)

California apple house space is likewise insufficient to store the quantity of apples and pears which would normally go into storage in that State. The estimated 1946 production is about 2 million bushels greater than in 1944, which would mean an expected peak storage load of about 1.8 million bushels. California apple houses have sufficient space to hold about 1.2 million bushels, thus leaving approximately 623,000 bushels to be stored in public warehouses. California's public coolers were 18 percentage points

fuller On August 1, 1944 than August 1 of this year, and at the November peak in 1944 about 824,000 bushels of apples and pears were stored in them. Therefore apple storers unable to find space in California apple houses this year should be able to find storage for the fruit in public coolers.

Washington apple house space appears sufficient this year for apples and pears in that State. The storage load of these fruits will approximate 14.3 million bushels by December 1, the peak period. In addition to having apple house space beyond this year's requirements, Washington's public coolers, according to previous records, could hold more than 200,000 bushels if necessary. There are two major producing areas in Washington, the Wenatchee-Okanogan Valley and the Yakima Valley. Apple house space in both of these areas appears sufficient for 1946 requirements. In 1945, the Wenatchee-Okanogan area, which has approximately 51 percent of the refrigerated apple house space, accounted for only 45 percent of the apples stored in the State, thus leaving the Yakima area to store 55 percent of the storage load in 49 percent of the space. Because apples in the Yakima Valley have been severely damaged by frost this year indications are that heaviest production increases over 1945 will occur in the Wenatchee-Okanogan Valley where the greatest amount of available space is located. Shortages of refrigerated cars may cause larger than usual proportions of apples produced in the Pacific States to be stored there.

North Central States

It appears that little difficulty will arise in storing that portion of the apple-pear crops expected to be stored in the North Central States this year. These States are not major apple-and pear-producing areas, and lack sufficient apple house space to take care of the normal storage requirements and therefore must depend heavily upon public houses from year to year. Production and storage in the Central States is expected to be below 1944 levels except in Illinois, Missouri, and Kansas, where appreciable increases are anticipated. Ohio, Illinois, Michigan, Wisconsin, Iowa, and Nebraska regularly have insufficient apple house space to care for total apple storage requirements. However, these States at the 1944 peak were holding the major portion of their apples in public coolers. This normal storage pattern indicates the probable apple storage in these States this fall. The August 1, 1946, occupancy of coolers in some of the six States was practically the same as on August 1, 1944, whereas in the other States it was considerably below that of 1944. All factors considered, the North Central States should be able to meet apple-pear storage requirements.

Middle Atlantic States

Apple houses in New York have more than enough space to meet anticipated storage needs for 1946. Public coolers of the State had an occupancy August 1 of this year 18 percentage points below that of August 1, 1944. In 1944 these public coolers at the peak stored over 2 million bushels of apples and pears. Little difficulty should be encountered in storing this year's crops of apples and pears.

In 1945, the apple houses in the Hudson Valley, which represent 58 percent of New York refrigerated apple house space, held 78 percent of the apples stored. It appears that space in both the Hudson Valley and western New York should be adequate even if the unequal distribution of storage, present in 1945, should reoccur in 1946. However, by retaining as many apples as possible in western New York apple houses until the November storage peak is passed, growers may avoid possible congestion in the more heavily laden storages in market areas.

New Jersey and Pennsylvania apple house space falls short of meeting this year's requirements by about 250,000 and 260,000 bushels respectively. In 1944 public warehouses cared for 700,000 bushels in New Jersey and 1,200,000 bushels in Pennsylvania. August 1 occupancy this year was about the same as in 1944 for New Jersey and 5 points below 1944 in Pennsylvania. Consequently no problem in storing 1946 apples and pears in the two States appears likely as public warehouses will be more than able to supplement apple house space. Public cooler space has a greater occupancy in the Philadelphia area than elsewhere in Pennsylvania. In 1945 about 17 percent of the apples and pears stored in the State were stored within a radius of 150 miles of Philadelphia. Even though cooler space appears adequate in the State as a whole, congestion may be avoided by holding apples in storages of the producing areas until after December 1.

South Atlantic States

Apple house space should be adequate to store the apple-pear production that is expected to require refrigerated space in the South Atlantic States except in North Carolina where public coolers can care for any needs beyond the capacity of the State's apple houses.

Virginia and West Virginia are the States of major importance in this region. Apple storage at the peak in Virginia over the past

5 years has ranged from a low of 28 percent to a high of 30 percent of the production. If 30 percent of the crop as anticipated on August 1, 1946, goes into storage, about 4,500,000 bushels would need refrigerated storage on December 1, 1946. Apple storages in Virginia on October 1, 1945 had a capacity for 5,574,000 bushels. Therefore if favorable crop conditions should increase the size of this year's crop beyond August 1 anticipations or other factors should send more apples and pears into storage, even to the extent of an additional load of 20 to 30 percent, Virginia apple houses should be adequate to meet the needs. Moreover, at the peak in 1944 Virginia public coolers held about 800,000 bushels. These coolers may be counted upon to store even greater quantities this year owing to a 12-point lower occupancy on August 1, 1946 than on the same date in 1944.

A situation similar to that in Virginia exists in West Virginia. Refrigerated apple houses are more than adequate to meet anticipated needs. However, in West Virginia, unlike Virginia, public cooler space in any significant amount cannot be counted upon for apple storage.

New England States

Production and storage estimates for 1946 in the New England States are appreciably lower than in 1944 and lower than the 5-year average. Consequently no storage problem is anticipated for this area.

Recommendations

In general, every producing area that has adequate storage space should care for locally grown apples and pears until the cooler storage peak in market centers has passed, thereby releasing facilities in these centers for the storage of nearby crops and any surpluses of other areas that have inadequate space. Michigan or Ohio apples which are earmarked for Southern markets should move southward early in the season, inasmuch as storage space, although adequate in the North Central States, is more plentiful in Southern States. Apples of western New York and western Pennsylvania should be stored until the December cooler peak has passed in the areas where produced, thereby avoiding a possible, but not probable, congestion of public coolers in the eastern terminal markets.

Growers and shippers of apples and pears in Washington should retain as large a portion of their storage crops as possible in their own coolers until the December cooler peak has been passed. Should producers have difficulty in storing apples and pears in Oregon, they may find some space in public storages of California; or if apples are destined to move eastward, producers will possibly be able to locate in transit storage in Idaho apple houses or in Missouri public storages.

It is recommended that any apples to be imported from Canada for storage be placed in apple houses in the New England area, in western New York, or in Washington State. If possible, storers and shippers from Canada should avoid sending shipments into the North Central States which are less well-adapted for storing these commodities than the other areas mentioned.

Finally, if any warehousemen have, or believe that they will have, excess space for apple storage, such space should be reported immediately to the Marketing Facilities Branch, Production and Marketing Administration, United States Department of Agriculture. That agency will try to get the information to interested producers and shippers.

Table 2.--Production of apples and pears and storage peaks by States (1941-46)

(In thousands of bushels)

State	1941-45 average		1944		1945		1946 1/	
	Apple-pear production	Storage peak	Apple-pear production	Storage peak	Apple-pear production	Storage peak	Apple-pear production	Storage peak
Maine, N. H.....	1,314	171	1,720	225	273	18	972	126
Vermont.....	549	161	516	217	106	11	305	95
Massachusetts....	2,282	1,116	2,759	1,554	420	258	1,569	769
R. I., Conn.....	1,557	650	1,875	823	636	264	1,364	587
New York.....	14,504	4,629	18,167	6,094	2,432	1,042	13,568	4,342
New Jersey.....	2,312	884	2,142	952	1,332	499	2,143	836
Pennsylvania.....	7,407	1,451	9,564	2,075	2,590	753	8,442	1,688
Del., Md., D.C....	2,259	145	2,792	192	1,023	44	2,167	152
Virginia.....	10,313	3,130	15,008	4,280	3,961	1,142	13,518	4,055
West Virginia....	3,613	686	4,784	908	1,968	512	3,986	757
North Carolina...	1,390	29	2,136	34	612	46	2,132	43
Ohio.....	4,562	645	5,768	834	1,222	330	2,507	351
Indiana.....	1,523	200	1,520	313	974	146	1,232	172
Illinois.....	3,413	853	2,753	977	3,038	846	3,631	908
Michigan.....	7,219	826	8,818	947	1,428	297	7,943	874
Wisconsin.....	706	148	805	213	316	118	780	164
Minn., Iowa.....	345	120	317	160	239	62	225	79
Missouri.....	1,316	416	835	489	1,187	332	1,326	464
Nebr., Kansas....	543	90	436	130	436	130	703	120
Ky., Tenn.....	1,187	130	859	221	1,341	129	1,120	123
Ark., Okla., Tex..	1,287	141	796	161	1,242	211	945	104
Mont., Colo., Utah:	2,749	48	3,358	81	2,556	48	1,991	40
Idaho, N. Mex....	2,637	32	2,779	15	3,050	11	2,527	25
Washington.....	34,037	12,022	39,767	12,588	34,670	12,138	40,085	14,298
Oregon.....	7,089	2,136	7,786	2,122	8,321	2,086	8,735	2,621
California.....	19,062	1,835	16,561	1,820	24,777	1,643	18,452	1,845
4/U. S. Total...	135,175/2	32,694 /3	154,621/2	38,425 /3	100,150/2	23,116 /3	142,368/2	35,638/3

1/ Estimated.

2/ Apples and pears grown in the above-named States only.

3/ Total of the State peaks which occur in various months--not the total peak which occurs December 1--estimated to be about 34,150,000 bushels for 1946.

4/ Total for apple and pear storing states only.

Table 3.--Quantities of apples and pears stored in coolers of refrigerated apple houses and in general cold-storage warehouses, by States, December 1, 1944 and 1945 ^{1/}

(In thousands of bushels)

State	1944		1945	
	Apples in	Apples in	Apples in	Apples in
	refrigerated:	general cold:	refrigerated:	general cold
	apple houses:	storage :apple houses:	storage :apple houses:	storage :apple houses:
	:warehouses	:	:warehouses	:
Maine, N. H.....:	85	58	7	9
Vermont.....:	103		5	1
Massachusetts.....:	1,094	280	77	106
R. I., Conn.....:	303	174	150	45
:				
New York.....:	4,025	2,085	524	408
New Jersey.....:	288	716	175	322
Pennsylvania.....:	830	1,246	232	405
:				
Del., Md., D. C.....:	94	98	1	40
Virginia.....:	3,441	849	726	156
West Virginia.....:	904	6	360	2
North Carolina.....:	8	26	16	29
:				
Chio.....:	314	533	41	290
Indiana.....:	115	124	47	75
Illinois.....:	354	596	242	608
Michigan.....:	342	626	43	252
Wisconsin.....:		214		119
:				
Minn., Iowa.....:		160		61
Missouri.....:	181	310	92	241
Nebr., Kans.....:	27	103	8	124
:				
Ky., Tenn.....:	92	216	7	122
Ark., Okla., Tex.....:	15	150	2	208
:				
Mont., Colo., Utah...:	1	80		48
Idaho, N. Mex.....:	6	13	3	6
:				
Washington.....:	12,395	228	11,824	280
Oregon.....:	1,639	480	1,643	443
California.....:	975	842	941	703
:				
U. S. Total.....:	27,631	10,213	17,166	5,103

^{1/} A few apples and pears are stored in other States. These are not included in the United States total above.

Table 4-- Cooler occupancy of public general cold storage warehouses on August 1, 1946, 1944, and at the apple-pear storage peak of 1944

State	:Percentage of occupancy:			State	:Percentage of occupancy		
	: Aug. 1:	: Aug. 1:	: Apple- :		: Aug. 1:	: Aug. 1:	: Apple- :
	: 1946 :	: 1944 :	: storage:		: 1946 :	: 1944 :	: storage:
	: :	: :	: peak :		: :	: :	: peak :
			: 1944 :				: 1944 :
Maine, N. H.....:	73	75	92	:Michigan.....:	85	81	81
Vermont.....:	73	75	92	:Wisconsin.....:	87	91	83
Massachusetts....:	91	93	84	:Minn., Iowa.....:	93	92	82
R. I., Conn.....:	60	80	87	:Missouri.....:	88	89	80
New York.....:	61	79	86	:Nebr., Kansas.....:	83	88	83
New Jersey.....:	85	83	82	:Ky., Tenn.....:	64	92	88
Pennsylvania.....:	77	84	87	:Ark., Okla., Tex....:	87	85	76
Del., Md., D.C....:	81	88	74	:Mont., Colo., Utah...:	85	92	85
Virginia.....:	55	67	84	:Idaho., N. Mex.....:	85	92	85
West Virginia.....:	55	67	84	:Washington.....:	70	69	76
North Carolina....:	95	83	83	:Oregon.....:	36	36	96
Ohio.....:	90	88	88	:California.....:	59	77	79
Indiana.....:	57	87	80	: :			
Illinois.....:	85	95	80	: United States.....:	76	84	80

from the Monthly Cold Storage Report.

Table 5-- The months in which apples and pears begin to move into cold storage warehouses, and the months when the apple-pear storage is at its peak

State	: Month :	: Peak :	State	: Month :	: Peak :
	:into-storage:	: storage :		:into-storage:	: storage :
	: movement :	: month :		: movement :	: month :
	: begins 1/:	: 2/ :		: begins 1/:	: 2/ :
Maine, N. H.....:	September	October	:Michigan.....:	September	October
Vermont.....:	September	October	:Wisconsin.....:	September	October
Massachusetts....:	September	October	:Minn., Iowa.....:	October	October
R. I., Conn.....:	September	October	:Missouri.....:	September	November
New York.....:	August	October	:Kans., Nebr.....:	September	October
New Jersey.....:	September	October	:Ky., Tenn.....:	September	November
Pennsylvania.....:	September	November	:Ark., Okla., Tex....:	September	October
Del., Md., D.C....:	September	October	:Mont., Colo., Utah...:	October	November
Virginia.....:	August	November	:Idaho., N. Mex.....:	October	November
West Virginia.....:	September	October	:Washington.....:	August	November
North Carolina....:	September	October	:Oregon.....:	August	October
Ohio.....:	September	November	:California.....:	August	November
Indiana.....:	August	November	: :		
Illinois.....:	September	October	: United States.....:	August	November

1/ For the month the "Into-storage" movement begins, the earliest month in which apples and pears moved into storage during 1944 and 1945 is given.

2/ The "Peak storage month" is the month (1944 and 1945) preceding the first of the month inventory which showed the greatest quantity of apples and pears in storage.

From the Monthly Cold Storage Report.